

06-05-08

Cofc



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Jeffrey Rapaport et al  
Assignee: MedCommunications, Inc.  
Title: Adaptive Communication Methods and Systems for Facilitating the Gathering, Distribution and Delivery of Information Related to Medical Care  
Application No.: 10/058,154 Filing Date: 01/25/2002  
U.S. Patent No.: 7,034,691 Issue Date: 04/25/2006  
Examiner: Nguyen, Phung Group Art Unit: 2632  
Docket No.: STEC-2012 Confirmation No.: 4077

**Certificate**

San Jose, California  
June 06, 2008

JUN 12 2008

**of Correction**

Attn: Certificate of Corrections Branch  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PETITION FOR EXPEDITED CERTIFICATE OF CORRECTION OR  
REPUBLICATION OF CORRECTED PATENT IN LIEU THEREOF**

Dear Sir:

1. Enclosed with this request are:
  - 1a. Form PTO/SB/44 filled in with the requested/suggested correction, and
  - 1b. Two identical compact discs (CD-Rs) burned to each contain the subject text files for pseudo-code Exhibits 1, 2 and 3.
2. Expedited processing is respectfully requested.

LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
San Jose, CA 95110  
Telephone: (408)-392-9520  
Facsimile: (408)-392-9262

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### Detailed Underlying Facts

4. The above identified U.S. Patent 7,034,691 (issued April 25, 2006) is currently owned in its entirety by MedCommunications, Inc. of Nevada (per assignment reel/frame: 018433/0700) and the below subscribed attorney has power of representation from said owner of the patent. MedCommunications, Inc. has commercial need for quickly perfecting the form of the Letters Patent of U.S. Patent 7,034,691. Expedited processing is therefore respectfully requested. All materials needed for expedited processing are believed to be provided herewith.

5. It has recently come to the patent owner's attention (around end of April 2008) that the subject patent may have been published by the USPTO in incomplete form. More specifically, software pseudo-code Exhibits 1, 2 and 3 as described for example at column 10, lines 30-44 appear to have not been published inside the Letters Patent although they remain part of the originally filed application.

6. It is believed that the non-publication mistake was incurred through the fault of the Patent and Trademark Office as is clearly disclosed by records of the office and that the patentee is thus entitled to relief pursuant to 35 USC 254 and 37 CFR 1.322. Issuance of a Certificate of Correction or republication of a corrected patent in lieu thereof is therefore requested pursuant to 37 CFR 1.322. Evidence of nonfault by the patentee is provided below.

LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
San Jose, CA 95110  
Telephone: (408)-392-9520  
Facsimile: (408)-392-9262

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Alternate request:

7. Should it be deemed that the non-publication mistake was incurred through fault of the patentee, issuance of a Certificate of Correction or republication of a corrected patent in lieu thereof is alternatively requested pursuant to 37 CFR 1.323 and 35 USC 255. The Patent Office is authorized to charge the Deposit account identified on the signature page of this Petition with any necessary fees. It is respectfully submitted that the mistake, if deemed the fault of the patentee/applicant, occurred in good faith and does not introduce new matter into the patent. During prosecution the patentee/applicant was not explicitly warned by the USPTO that the pseudo-code Exhibits 1-3 would not be published. On the other hand, applicant had gone through special pains to make it clear at the time of filing that pseudo-code Exhibits 1-3 were part of the application as filed. This shall be demonstrated in detail below.

**Memorialization of April Telephone Conversation with Examiner Phung Nguyen**

8. The Examiner who allowed U.S. Patent 7,034,691 is believed to be still employed at the USPTO and has jurisdiction over still pending and currently allowed divisional application 11/317,597 (issue fee due 7/3/2008).

9. On or about 4/29/2008 the below subscribed attorney discussed with Examiner Phung Nguyen by telephone the nonpublication problem and best possible remedies for the subject patent and also for preventing the same nonpublication problem from recurring in divisional application 11/317,597. The Examiner strongly suggested in both cases that CD-ROMs or CD-R discs in accordance with PTO rules should be submitted. Unfortunately, the original computer files from which the originally filed pseudo-code Exhibits 1-3 were made, could not be found which is why it has taken the patentee/applicant this long to make the current submission. The patentee/applicant recreated new code from the originally filed

LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
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U.S. Patent No. 7,034,691

paper copies of pseudo-code Exhibits 1-3 (also Exhibit D of this petition) as shall be detailed below.

**Requested/Suggested Method of Correction**

10. Two identical CD-R discs labeled Copy 1 and Copy 2 are submitted herewith in accordance with MPEP §608.05 and 37 CFR 1.52(e).

11. It is respectfully requested or suggested that the subject patent be corrected by inserting the following at column 10 thereof immediately above line 45 ("Overview of an Adaptive ..."):

CD-R discs containing the aforementioned Exhibits 1, 2 and 3 have been deposited with the U.S. Patent and Trademark Office, are incorporated herein by reference and copies thereof may be obtained from the U.S. Patent and Trademark Office.

12. Alternatively, at the USPTO's option, the error could be corrected by republishing the patent with the missing Exhibits 1-3 included as part of the specification or drawings.

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2033 Gateway Place  
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**Detailed proofs that no new matter is being introduced and that the error was not the patentee/applicant's fault**

13. Exhibit A (attached hereto) is a true copy of columns 9 and 10 of the subject patent U.S. 7,034,691 B1. As seen at column 10, lines 30-44, explicit reference is made to pseudo code appendices and more specifically to an Exhibit 1, Exhibit 2 and Exhibit 3 thereof. Column 10, lines 33-34 explicitly state: "The below detailed description section includes pseudo code appendices in which: ..." [*emphasis added*]. Thus it is clear from this one sentence alone that the appendices were intended to be part of the detailed description section of the patent application as originally filed.

14. Upon recently reviewing the published patent in detail, the patentee discovered that the pseudo-code Exhibits 1-3 do not appear to be included in the publication of the specification and thus the published patent appears to have been issued in incomplete form. MPEP §608.05 indicates that the USPTO does not have an "option" to use of compact disc substitutes unless incorporation by reference language is submitted by applicant. MPEP §608.05 states:

"The incorporation by reference statement of the material on the compact disc is required to be part of the specification to allow the Office the option of separately printing the material on compact disc. The examiner should require applicant(s) to insert this statement if it is omitted or the examiner may insert the statement by examiner's amendment at the time of allowance." [*Emphasis added.*]

Thus it is seen from the above reproduced portion of MPEP §608.05 that the USPTO recognizes the responsibility of the Examiner to alert the applicant of a need for compact discs if such are deemed necessary and the USPTO recognizes it does not have an option to not

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LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
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publish code that forms part of the specification unless the incorporation by reference language is added. The patentee is attempting to expedite the process here by submitting both.

15. During prosecution of the subject patent, the examiner did not warn or require applicant(s) to provide compact discs and insert the incorporation by reference statement. Thus it is believed that the USPTO did not have the option of not publishing the pseudo-code Exhibits 1-3 and that the error of nonpublication is therefore the fault of the USPTO and that 35 USC 254 and 37 CFR 1.322 should apply.

16. Exhibit B (attached hereto) is a true copy of the return receipt postcard received from the U.S. Patent Office after filing of the subject application 10/058,154. As seen in Exhibit B, the person who filled out the postcard (Janet Moore) wrote down that the submission "[\*includes Exhibits]" and the USPTO acknowledged receipt of the listed materials.

17. Exhibit C (attached hereto) is a true copy of pages 1 and 2 of the transmittal letter that accompanied the filing. The certificate of Express Mailing on page 1 of Exhibit C is signed by the same person who filled out the postcard return receipt postcard (Janet Moore). On page 2 of Exhibit C there is a SECTION I: entitled "IDENTIFICATION OF HARD COPY PAPERS ... INCLUDED HERewith FOR INITIALLY FORMING THE PRESENTLY SUBMITTED, NON-PROVISIONAL APPLICATION". [*Emphasis added.*]

Interposed between the indication that there are 226 pages of specification including an abstract and 17 claims and the indication that there are 50 sheets of publication-quality drawings is a further indication that an EXHIBIT 1 constituted by 9 pages is enclosed, an EXHIBIT 2 constituted by 24 pages is enclosed as part of the application and an EXHIBIT 3 constituted by 4 pages is enclosed as part of the application. Thus it is seen that Applicant

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MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
San Jose, CA 95110  
Telephone: (408)-392-9520  
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U.S. Patent No. 7,034,691

went to great pains to flag out the presence of the pseudo-code Exhibits 1-3 and to declare that they are part of the specification as originally filed.

18. A Notice of Allowance for the subject patent was mailed 9/16/2005.

Applicant's filed a payment of the Issue Fee on or about December 16, 2005. An Issue Notification was mailed to the Applicants on 4/05/2006. The Issue Notification did not indicate that less than the entirety of the disclosure material would be published with the patent.

19. Exhibit D is a true copy of said Exhibit 1, Exhibit 2, and Exhibit 3 as filed with the original patent application.

20. Exhibit E is a true copy of the recordation of the assignment in favor of MedCommunications, Inc., the current true party in full interest and owner in entirety of U.S. Patent 7,034,691.

21. As mentioned above, recently it came to the current patent owner's attention that the disclosure material of Exhibits 1, Exhibit 2, and Exhibit 3 are missing from the published patent. However, the original computer files from which Exhibits 1, Exhibit 2, and Exhibit 3 were originally made could not be found. Optical Character Recognition (OCR) was instead used to scan in the content of Exhibit D. As may be appreciated by those skilled in the current state of art of OCR, it is often far from perfect or free of errors. At least two independent groups of people were employed to proof read and correct the OCR output in cascade fashion in an attempt to make the here-submitted CD-R text files as close as practical in identity to the originally submitted hard copy versions (Exhibit D). It is believed that the text files in the accompanying compact discs are essentially the same as the text of Exhibit D. No representation is made here that the pseudo-code is free of all possible syntax errors and is immediately executable in its supplied form. However, it is submitted based on good faith

LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
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efforts and belief that the text files in the accompanying compact discs are essentially the same as the text of Exhibit D and that no new matter is being intentionally or recklessly introduced.

**Request for Expedited Correction**

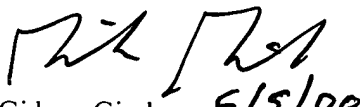
22. Pursuant to MPEP §1480.01 it is respectfully submitted that the patent owner has submitted supporting documentation consisting of relevant photocopies of receipts, manuscript pages, etc. that validate and support the patentee's request and entitlement to a corrected patent. Accordingly a corrected patent or certificate of correction should be provided that alternatively includes the entirety of the attached Exhibit D or includes the requested incorporation by reference language for the here submitted compact discs.

The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. 50-2257.

Should the U.S. Patent and Trademark Office have any inquiries concerning this request, please contact the undersigned Attorney for Applicant/Patentee at (408) 392-9250.

**EXPRESS MAIL LABEL NO.  
EM 038 366 403 US**

Respectfully submitted,

  
Gideon Gimlan 6/5/08  
Attorney for Applicants  
Reg. No. 31,955

MacPherson Kwok Chen & Heid LLP  
2033 Gateway Place, Suite # 400  
San Jose, CA 95110  
Tel: (408) 392-9250

LAW OFFICES OF  
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San Jose, California  
June 06, 2008

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13. Exhibit A (attached hereto) is a true copy of columns 9 and 10 of the subject patent U.S. 7,034,691 B1. As seen at column 10, lines 30-44, explicit reference is made to pseudo code appendices and more specifically to an Exhibit 1, Exhibit 2 and Exhibit 3 thereof. Column 10, lines 33-34 explicitly state: "The below detailed description section includes pseudo code appendices in which: ..." [*emphasis added*]. Thus it is clear from this one sentence alone that the appendices were intended to be part of the detailed description section of the patent application as originally filed.

14. Upon recently reviewing the published patent in detail, the patentee discovered that the pseudo-code Exhibits 1-3 do not appear to be included in the publication of the specification and thus the published patent appears to have been issued in incomplete form. MPEP §608.05 indicates that the USPTO does not have an "option" to use of compact disc substitutes unless incorporation by reference language is submitted by applicant. MPEP §608.05 states:

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publish code that forms part of the specification unless the incorporation by reference language is added. The patentee is attempting to expedite the process here by submitting both.

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17. Exhibit C (attached hereto) is a true copy of pages 1 and 2 of the transmittal letter that accompanied the filing. The certificate of Express Mailing on page 1 of Exhibit C is signed by the same person who filled out the postcard return receipt postcard (Janet Moore). On page 2 of Exhibit C there is a SECTION I: entitled "IDENTIFICATION OF HARD COPY PAPERS ... INCLUDED HERewith FOR INITIALLY FORMING THE PRESENTLY SUBMITTED, NON-PROVISIONAL APPLICATION". [Emphasis added.] Interposed between the indication that there are 226 pages of specification including an abstract and 17 claims and the indication that there are 50 sheets of publication-quality drawings is a further indication that an EXHIBIT 1 constituted by 9 pages is enclosed, an EXHIBIT 2 constituted by 24 pages is enclosed as part of the application and an EXHIBIT 3 constituted by 4 pages is enclosed as part of the application. Thus it is seen that Applicant

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19. Exhibit D is a true copy of said Exhibit 1, Exhibit 2, and Exhibit 3 as filed with the original patent application.

20. Exhibit E is a true copy of the recordation of the assignment in favor of MedCommunications, Inc., the current true party in full interest and owner in entirety of U.S. Patent 7,034,691.

21. As mentioned above, recently it came to the current patent owner's attention that the disclosure material of Exhibits 1, Exhibit 2, and Exhibit 3 are missing from the published patent. However, the original computer files from which Exhibits 1, Exhibit 2, and Exhibit 3 were originally made could not be found. Optical Character Recognition (OCR) was instead used to scan in the content of Exhibit D. As may be appreciated by those skilled in the current state of art of OCR, it is often far from perfect or free of errors. At least two independent groups of people were employed to proof read and correct the OCR output in cascade fashion in an attempt to make the here-submitted CD-R text files as close as practical in identity to the originally submitted hard copy versions (Exhibit D). It is believed that the text files in the accompanying compact discs are essentially the same as the text of Exhibit D. No representation is made here that the pseudo-code is free of all possible syntax errors and is immediately executable in its supplied form. However, it is submitted based on good faith

efforts and belief that the text files in the accompanying compact discs are essentially the same as the text of Exhibit D and that no new matter is being intentionally or recklessly introduced.

**Request for Expedited Correction**


22. Pursuant to MPEP §1480.01 it is respectfully submitted that the patent owner has submitted supporting documentation consisting of relevant photocopies of receipts, manuscript pages, etc. that validate and support the patentee's request and entitlement to a corrected patent. Accordingly a corrected patent or certificate of correction should be provided that alternatively includes the entirety of the attached Exhibit D or includes the requested incorporation by reference language for the here submitted compact discs.

The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. 50-2257.

Should the U.S. Patent and Trademark Office have any inquiries concerning this request, please contact the undersigned Attorney for Applicant/Patentee at (408) 392-9250.

**EXPRESS MAIL LABEL NO.  
EM 038 366 403 US**

Respectfully submitted,

  
Gideon Gimlan 6/15/08  
Attorney for Applicants  
Reg. No. 31,955

MacPherson Kwok Chen & Heid LLP  
2033 Gateway Place, Suite # 400  
San Jose, CA 95110  
Tel: (408) 392-9250

LAW OFFICES OF  
MacPherson, Kwok, Chen &  
Heid LLP

2033 Gateway Place  
Suite 400  
San Jose, CA 95110  
Telephone: (408)-392-9250  
Facsimile: (408)-392-9262



# EXHIBIT A

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delegated follow up on a Test Result Delivery Interview whose in-completion triggered a Retrieval Alert in accordance with the present disclosure;

FIG. 25 illustrates an Interviews finding screen which may be used by a Medical Service Provider to locate for review and/or editing, sent Interviews whose delivery has been initiated within a System in accordance with the present disclosure;

FIG. 26 illustrates an Account Settings reviews screen which may be used by a Medical Service Provider to review and/or change settings in his or her Account within a System in accordance with the present disclosure;

FIG. 27 illustrates an Interviews Opening screen which may be used by a Patient or another authorized Target to view, review and/or respond to Interviews he or she has received in accordance with the present disclosure;

FIG. 28A illustrates a first Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or respond to an Interview for an Office Visit Follow Up for a Sore Throat which is being delivered in accordance with the present disclosure;

FIG. 28B illustrates a second Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or respond to an Interview concerning Lipid Test Results which is being delivered in accordance with the present disclosure;

FIG. 28C illustrates a third Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or acknowledge an Interview concerning Lipid Test Results that has been delivered in accordance with the present disclosure;

FIG. 28D illustrates another Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or acknowledge an Interview concerning Health Maintenance issues (e.g., vaccinations scheduling) that has been delivered in accordance with the present disclosure;

FIG. 29 illustrates a further Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or acknowledge an Interview concerning results of a chemical screening battery test that has been delivered in accordance with the present disclosure;

FIG. 30 illustrates another Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or acknowledge an Interview concerning results of a lipid panel test that has been formulated and delivered in accordance with the present disclosure;

FIG. 31 illustrates a further, Opened Interview screen which may be used by a Patient or another authorized Target to view, review and/or respond to a Health Maintenance Follow Up Interview concerning a previously-detected congestive heart failure, where the Health Maintenance Follow Up Interview is being conducted in accordance with the present disclosure;

FIG. 32 illustrates a Patient's Account Settings screen which may be used by a Patient or another authorized Target to view, review and/or modify the Patient's Account settings within a System in accordance with the present disclosure;

FIG. 33 illustrates an Administrator's Locate/Add screen which may be used by a System Administrator to locate and/or add and/or delete Patient Records to a System in accordance with the present disclosure;

FIG. 34 illustrates an Administrator's Patient-Record Editing screen which may be used by a System Administrator to view and/or edit Patient Information and/or Patient Channel Information within a System in accordance with the present disclosure;

FIG. 35 illustrates an Administrator's Account Settings screen which may be used by a System Administrator to review and/or change his or her Account Settings within a System in accordance with the present disclosure;

FIG. 36 illustrates a displayed Chart Note for a given Patient whose records are kept within a System in accordance with the present disclosure;

FIG. 37 illustrates a Patient Information screen which may be used by a Medical Service Provider to review Patient Information kept within a System in accordance with the present disclosure;

FIG. 38 illustrates a Communication Channels Preference screen which may be used by a Medical system Provider to review and/or edit a Patient's Communication Channels information as kept within a System in accordance with the present disclosure;

FIG. 39A illustrates an Interview Data Structure which may be generated and/or transmitted as a signal within a System in accordance with the present disclosure;

FIG. 39B illustrates details of a Dialog Data Structure which may be developed and/or transmitted as a signal within a System in accordance with the present disclosure;

FIG. 40A is a block diagram illustrating how Dialog Data Structures may be re/formulated, instantiated, sent to targets via a scheduler and their delivery results may be returned; and

FIG. 40B is a block diagram illustrating how an Application Server may provide an I/O firewall and scalability.

#### BRIEF DESCRIPTION OF PSEUDO-CODE APPENDICES

The below detailed description section includes pseudo-code appendices in which:

Exhibit 1 is a pseudo code listing example of a Dialog Data Structure for a follow up office visit for asthma in accordance with the present disclosure;

Exhibit 2 is a pseudo code listing example of a Dialog Data Structure for reporting a chemistry battery of tests to a Patient in accordance with the present disclosure; and

Exhibit 3 is a pseudo code listing example of a Dialog Data Structure for delivering a result of a *Streptococcus* test to a Patient in accordance with the present disclosure.

#### Overview of an Adaptive Communications System

An overview is first provided of an adaptive communications system ("System") that is structured in accordance with the present disclosure so as to introduce its possible (I) communication capabilities; (II) user interfaces; and (III) instantiation processes.

##### I. Communication Capabilities

A System in accordance with the present disclosure may be designed for use in a wide variety of settings, including from that a single Medical Provider facility (e.g., solo practitioner office) to that of a multi-specialty organization; and to that of a general service hospital. Such a System should be able to offer its various communications services either within a restricted, on-premises environment, or over an open channel network such as the World Wide Web where the operations of the System may be coordinated by one or more application service providers.

In one embodiment, the System conducts communicative transactions described herein as "Interviews" by using a variety of communication channels and modalities. The communication channels and/or modalities may include those that rely on one or more of sound-detection (e.g., touch-tone), speech-recognition (including speaker identification

# EXHIBIT B

FILED-USPTO  
Publication

JUN 12 2008

DOCKET



FILE



The U.S. PATENT Office date stamp and Serial No. (if a new application) sets forth the date of receipt of:

Applicant: JEFFREY A. RAPAPORT et al.Patent/Serial No.: Unassigned Issued/Filing Date: HerewithTitle: ADAPTIVE COMMUNICATION METHODS AND SYSTEMS FOR FACILITATING THE GATHERING, DISTRIBUTION AND DELIVERY OF INFORMATION RELATED TO MEDICAL CARE☒ Patent Application and \$ 675.00 feePages in Spec. 263\* : No. of Claims 17 [\* includes exhibits]☐ CPA ☐ CIP ☐ CON ☐ DIV ☐ Provisional ☐ Request for Continued Examination☒ No. of Sheets of Drawings 50 : ☐ Formal or ☐ Informal ☒ Publication Quality☒ Non-Publication Request☐ Preliminary Amendment☐ Response to Notice for Missing Parts☒ Assignment and Cover Sheet☒ Declaration☒ Power of Attorney☐ Response☐ Petition for Extension of Time (       months)☐ FEE: \$       ☒ Other: STATEMENT CLAIMING SMALL ENTITY STATUS

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FEB 28 2002

FLIESLER DUBB,  
MEYER & LOVEJOY☐ Notice of Appeal☐ Appeal Brief☐ IDS☐ Issue Fee Transmittal☒ Transmittal Letter☒ Certificate of Mailing☒ Express Mail No. EL 467 322 391 US

JC971 U.S. PTO

10/058154



01/25/02

File No.: STEC-02012 USG GGGAttorney/Secy: Gideon Givlan/jmDate Mailed: 01/25/02Date Due:       Date Mailed: 01/25/02

Fliesler, Dubb, Meyer &amp; Lovejoy

File: STEC-02012 USG

Additional Items Docketed:

Postcard: February 25, 2002Foreign File Letter: July 25, 2002Foreign File: January 25, 2003Disclosure Statement: April 25, 2002Status:       Notice/Missing Parts:       

Fliesler, Dubb, Meyer &amp; Lovejoy

File: STEC-02012 USGAction Item: Prelim AmendDate Due: April 25, 2002Critical Date:       Attorney Path: GGGDocketed By: mprVerified By:       

Fliesler, Dubb, Meyer &amp; Lovejoy

File: STEC-02012 USGAction Item: Filing ReceiptDate Due: March 25, 2002Critical Date:       Attorney Path: GGGDocketed By: mprVerified By:       

\* Publication N/A

Remain

USPTO

Publication

JUN 12 2008

# EXHIBIT C

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Patent Publication

JUN 12 2008

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of		<b>PATENT APPLICATION FILING</b>
Inventor(s):	JEFFREY A. RAPAPORT et al.	Art Unit: Not-yet-assigned
SC/Serial No.:	Not-yet-assigned	Examiner: Not-yet-assigned
Confirm No.:	Not-yet-assigned	
Filed:	Herewith	Customer No.: <u>23910</u>
Title: ADAPTIVE COMMUNICATION METHODS AND SYSTEMS FOR FACILITATING THE GATHERING, DISTRIBUTION AND DELIVERY OF INFORMATION RELATED TO MEDICAL CARE		Attorney Docket: <u>STEC-02012US0</u>
Patent Term Adjust Info		
PTO Mailed Date: <u>N/A</u>		PTO Effective Receipt Date:

CERTIFICATE OF MAILING BY "EXPRESS MAIL" UNDER 37 C.F.R. §1.10

"Express Mail" mailing label number: EL467322391US  
Date of Mailing: January 25, 2002

**EL467322391US**

I hereby certify that this correspondence is being deposited with the United States Postal Service, utilizing the "Express Mail Post Office to Addressee" service addressed to Box Patent Application, Commissioner for Patents, Washington, DC 20231 and mailed on the above Date of Mailing with the above "Express Mail" mailing label number.

  
Janet G. Moore (Signature)  
Signature Date: January 25, 2002

**NON-PROVISIONAL APPLICATION TRANSMITTAL LETTER**  
**UNDER 37 C.F.R. §1.53(b)**

Box PATENT APPLICATION  
Commissioner for Patents  
Washington, DC 20231

Dear Sir:

This filing is summarized by the following **Table of Contents**:

<input checked="" type="checkbox"/>	Section I:	Identification of hardcopy <b>PAPERS</b> and/or electronic documents included herewith for initially forming <i>the presently submitted Non-Provisional Patent Application</i> . . . . . 2
<input type="checkbox"/>	Section II:	Identification of earlier-filed applications and/or claims of priority to dates thereof which inure to <b>BENEFIT</b> of the presently submitted application and <b>FIRST SENTENCE</b> Amendments . . . . .

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Patent Publication

**JUN 12 2008**

<input checked="" type="checkbox"/>	Section III:	<b>PRE-GRANT PUBLICATION</b> information including optional OPT-OUT CERTIFICATION per 37 CFR §1.213 . . . . .	4
<input type="checkbox"/>	Section IV:	<b>Amendments</b> (other than First Sentence ones) to initially formed and presently submitted application . . . . .	
<input checked="" type="checkbox"/>	Section V:	Additional submissions and/or requests . . . . .	4

Legend:      ☒ or ✓ means used or picked or provided  
                  ☐ or     means \*not\* used / \*not\* picked / \*not\* provided

<b>SECTION I:</b>	<b>IDENTIFICATION OF HARDCOPY PAPERS AND/OR ELECTRONIC DOCUMENTS INCLUDED HERewith FOR INITIALLY FORMING THE PRESENTLY SUBMITTED, NON-PROVISIONAL APPLICATION (NPA)</b>
-------------------	---

Transmitted herewith for filing as a non-provisional patent application pursuant to 37 C.F.R. §1.53(b) are papers and/or electronic submissions identified as follows:

- ☒ No. of Pages of **Specification** = 226, which pages include an Abstract and 17 Claims (at least one);
  - ☒ Plus as part of the Application, **EXHIBIT-1** = 9 pages,
  - ☒ Plus as part of the Application, **EXHIBIT-2** = 24 pages,
  - ☒ Plus as part of the Application, **EXHIBIT-3** = 4 pages.
- ☒ No. of Sheets of **Drawings** = 50, which sheets are:  
                  Informal    ; Publication-Quality ✓;      Formal:    .
- ☒ **Satisfaction of Oath Requirement**
  - (A) ✓ Submission of originally-signed **Declaration** with number of pages (counting all counterpart versions if any) = 5.  
                  --OR--
  - (B)     Submission of an originally-signed Declaration *is excused* because a copy is being submitted pursuant to 37 CFR §1.63(d)(1) of an earlier-filed Declaration from another application as detailed in below Section II.
- ☒ Fee is being concurrently paid by check or otherwise if box is checked.

The above-identified papers and/or electronic submissions are further identified by one or more of the following, invention-related and/or attorney-related attributes:

Title:                    *Adaptive Communication Methods and Systems for Facilitating the Gathering, Distribution and Delivery of Information Related to Medical Care*

USPTO  
Publication

JUN 12 2008

Inventor(s): (1) Jeffrey A. Rapaport, Seymour A. Rapaport, Jeffrey E. Clarke,  
Eric R. Rinehart, Michael U. Bergens

Electronic File Name(s): N/A  
Other: N/A

<b>SECTION II:</b>	<b>IDENTIFICATION OF EARLIER-FILED APPLICATIONS AND/OR CLAIMS OF PRIORITY BASED THEREON WHICH PRIORITY DATES INURE TO BENEFIT OF THE PRESENTLY SUBMITTED APPLICATION</b>
--------------------	--

Pursuant to 37 C.F.R. §1.78, the following Provisional (PPA) and/or Nonprovisional (NPA) and/or international (e.g. PCT) ones of, effectively Copending, Prior-Filed Complete Application(s), if any, are respectively identified *at least by series code and serial number* and international application number and filing date as follows: [NONE]

**Immediate Co-pending Parent (Ref #1)**

*Benefit Claimed* N/A

SC/Serial No.:

Art Unit:

Filed:

Examiner:

Confirm No.:

Title:

Inventor(s):

Atty. Docket No.:

**First Sentence & Other Initial Amendments**

\_\_\_\_\_ Please AMEND the specification of this application by [deleting the existing, cross referencing first sentence following the title and inserting therefor:] [inserting as the first sentences following the title:] "This application [is a divisional of and] [continues] [continues-in-part] from U.S. Serial No.   /  /  , filed                     , [now abandoned,] [where the latter [continued] [continued-in-part] from Serial No.   /  /  , filed                     ]. The disclosures of said applications is/are incorporated herein by reference."

\_\_\_\_\_ Please CANCEL in this application, original claims            before calculating the filing fee. (At least one original independent claim must be and is hereby left present for filing purposes.)

**Claim of Foreign Priority**

\_\_\_\_\_ Priority of foreign application Serial No.           , filed on                     , in                      is claimed under 35 U.S.C. §119.

Patent Publication

JUN 12 2008



\_\_\_\_\_ The certified copy was filed in prior U.S. application Serial No. \_\_\_\_\_,  
filed \_\_\_\_\_.

**SECTION III:**

**Pre-grant Publication information including optional  
OPT-OUT CERTIFICATION**

For applications filed on or after November 29, 2000:

☒ Preclusion from pre-grant publication is hereby requested and a rescindable certification pursuant to 35 USC § 122(b) is hereby made that the invention claimed and disclosed in the present application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publications of applications 18 months after filing.

--AND/OR--

☒ Preclusion from pre-grant publication is requested in an accompanying PTO Form PTO/SB/35 or a substantially similar such form (FDML 111.001) and is signed in compliance with 37 CFR § 1.33(b).

\_\_\_\_\_ Early pre-grant publication is hereby requested pursuant to 37 CFR § 1.219 and the publication fee set forth in 37 CFR § 1.18(d) accompanies this request.

--OR--

\_\_\_\_\_ Applicant has no objection to pre-grant publication of this application pursuant to 37 CFR § 1.211.

**SECTION IV:**

**Amendments (other than First Sentence ones) to the here initially  
formed and presently submitted application:**

\_\_\_\_\_ A **PRELIMINARY AMENDMENT** is enclosed. Please enter the preliminary amendment before calculating the application filing fee. (Claims added should be consecutively numbered beginning with next number after highest number in the enclosed application papers.)

**SECTION V:**

**Additional submissions and/or requests:**

***Pre-emptive* Provisional Election of Restrictable Claims and/or Restrictable Species**

In the event that the U.S. PTO deems a restriction requirement to be necessary and identifies two or more electable groups of claims and requires Applicant to elect one such group, Applicant hereby *pre-emptively* and provisionally elects, with traverse, the group which includes Claim 7.

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In the event that the U.S. PTO deems an election among species to be necessary, and identifies two or more electable species or subspecies by pointing to respectively referenced items in the drawings, and requires Applicant to elect one of such identified species or subspecies, Applicant hereby *pre-emptively* and provisionally elects, with traverse, the species or subspecies which includes element 1000 of Fig. 10A.

If neither of said election of claims or election of species is made a requirement by the U.S. PTO in its initial examination, then the above pre-emptive elections are to be treated as if they had not been made. If any of the above pre-emptive elections do not make sense given the context of the election requirements made by the U.S. PTO, then such a pre-emptive election by Applicant is to be deemed as not having been made.

#### Petition for Extension of Time to Respond

\_\_\_\_\_ No extension of time is required for maintaining the copendency of each of the above-identified, Immediate Parents.

\_\_\_\_\_ Pursuant to 37 C.F.R. §1.136(a), enclosed is/are Petitions for Extension of Time for maintaining the copendency of the corresponding Immediate Parent(s) up through and including today, together with the fee(s) set by 37 C.F.R. §1.17. (If such papers/fees are inadvertently missing, then this section, if checked, is to be treated as a request for such extensions as necessary to maintain copendency and authorization to charge the below-identified Deposit Account for such fees.)

#### Power of Attorney

\_\_\_\_\_ A power of attorney appears in Immediate Parent (Ref #1).

✓\_\_\_\_\_ A new power of attorney is submitted herewith.

#### Assignment

\_\_\_\_\_ Immediate Parent (Ref #1) is assigned of record to:

✓\_\_\_\_\_ An assignment of the invention to:  
SolveTech Corporation, Sunnyvale, California  
is submitted herewith, together with an ASSIGNMENT  
RECORDATION FORM COVER SHEET and recordal fee of \$40.00.

105.004:120197  
Patent Publication

JUN 12 2008

### Small Entity Statement

✓ Statement(s) claiming small entity status is (are) submitted herewith.

       Statement(s) claiming small entity status was (were) filed in the parent application Serial No.           , on            and its (their) benefit under 37 C.F.R. §1.28(a) is (are) hereby claimed.

### Also Enclosed Are:

       An Information Disclosure Statement under 37 C.F.R. §1.56.

### Filing Fee

The application filing fee is calculated as shown below:

No. Filed	No. Extra		Rate Small Entity/ Other Than Small Entity		
Basic Fee			\$355.00 \$710.00	=	\$ 355.00
Total Claims <u>17</u> ** - 20 =	<u>0</u> *	X	\$ 9.00 \$ 18.00	=	\$ 0.00
Independent Claims <u>10</u> ** - 3 =	<u>7</u> *	X	\$ 40.00 \$ 80.00	=	\$ 280.00
First Presentation of Multiple Dependent Claim(s) <u>      </u>			\$135.00 \$270.00	=	\$
Total PATENT APPLICATION FILING FEE:					\$ 635.00

\* If the difference is less than zero, enter "0".

\*\* Count claims after any amendment.

### Method of Payment of Fees

The total fee associated with this communication is calculated as follows:

Patent application filing fee	\$ 635.00
Net fee for extension of time (See attached petition)	\$
Assignment recordal fee (See attached cover sheet)	\$ 40.00
TOTAL FEE DUE:	===== \$ 675.00

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- ✓ A check in the amount of the TOTAL FEE DUE is enclosed.
- ✓ The Commissioner is hereby authorized to charge underpayment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 06-1325. A duplicate copy of this NON-PROVISIONAL APPLICATION TRANSMITTAL LETTER UNDER 37 C.F.R. §1.53(b) form is enclosed.

**Correspondence Address**

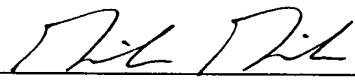
All correspondence should be addressed as follows:

Gideon Gimlan, Esq.  
FLIESLER, DUBB, MEYER & LOVEJOY LLP  
Four Embarcadero Center, Suite 400  
San Francisco, California 94111-4156  
Telephone (415) 362-3800

Direct all telephone calls to the undersigned attorney at (408) 748-7300.

Respectfully submitted,

Date: January 25, 2002

By:   
Gideon Gimlan  
Reg. No. 31,955

FLIESLER, DUBB, MEYER & LOVEJOY LLP  
Four Embarcadero Center, Suite 400  
San Francisco, California 94111-4156  
(415) 362-3800

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# EXHIBIT D

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Patent Publication

JUN 12 2008

EXHIBIT 1

USPTO  
Publication

JUN 12 2008

**EXHIBIT 1**  
**PSEUDO CODE LISTING OF FOLLOW UP FOR ASTHMA OFFICE VISIT DIALOG**

```

1. package com.solvetech.st_notify;
2.
3. import java.util.*;
4. import com.solvetech.st_lang.*;
5.
6. public class FU_Asthma_Dialog extends DialogBase
7. {
8.     private static final String ATTR_DOCTOR_USES_PFR1
9.     = "person(doctor).uses_pfr1";
10.    private static final String ATTR_DOCTOR_USES_PFR2
11.    = "person(doctor).uses_pfr2";
12.
13.    // is the inOfficePF an attribute of the patient or of the dialog??
14.    private static final String ATTR_PATIENT_INOFFICEPF
15.    = "person(patient).inOfficePF";
16.
17.    private static final String ATTR_PATIENT_AGE = "person(patient).age";
18.    private static final String ATTR_PATIENT_HEIGHT = "person(patient).height";
19.    private static final String ATTR_PATIENT_SEX = "person(patient).sex";
20.
21.    private final static String ATTR_DIALOG_WORSE
22.    = "dialog.worse";
23.    private final static String ATTR_DIALOG_READY
24.    = "dialog.ready";
25.    private final static String ATTR_DIALOG_RETRIG
26.    = "dialog.retrig";
27.    private final static String ATTR_DIALOG_RECALL_1
28.    = "dialog.recall_1";
29.    private final static String ATTR_DIALOG_RECALL_2
30.    = "dialog.recall_2";
31.    private final static String ATTR_DIALOG_OK_END
32.    = "dialog.okend";

```

```

19. private final static String ATTR_DIA_LOG_ACK_ER           = "dialog.ackER";
20. private final static String ATTR_DIALOG_PF_1             = "dialog.pf_1";
21. //=====
22. private boolean doctor_uses_pfr1;
23. private boolean doctor_uses_pfr2;
24. private int inOfficePF;
25. private int retrig;
26. private int age = 0;
27. private int height = 0;
28. private String sex = "";
29.
30. public FU_Asthma_Dialog()
31. {
32.     super();
33. }
34.
35. final protected void init()
36.     throws Exception
37. {
38.     // load up all the variables passed in from the message.
39.     doctor_uses_pfr1 = getAttrBoolean(ATTR_DOCTOR_USES_PFR1);
40.     doctor_uses_pfr2 = getAttrBoolean(ATTR_DOCTOR_USES_PFR2);
41.     inOfficePF       = getAttrInt(ATTR_PATIENT_INOFFICEPF);
42.     retrig            = getAttrInt(ATTR_DIALOG_RETRIG);
43.     age               = getAttrInt(ATTR_PATIENT_AGE);

```



```

43.         height      = getAttrInt(ATTR_PATIENT_HEIGHT);
44.         sex          = getAttrString(ATTR_PATIENT_SEX);
45.     }

46.     final protected void register()
47.     {
48.         // registration is a way of telling scheduler what attributes are
49.         // needed for a message.
50.         registerAttribute(ATTR_DOCTOR_USES_PFR1);
51.         registerAttribute(ATTR_DOCTOR_USES_PFR2);
52.         registerAttribute(ATTR_PATIENT_INOFFICEPF);
53.         registerAttribute(ATTR_PATIENT_AGE);
54.         registerAttribute(ATTR_PATIENT_HEIGHT);
55.         registerAttribute(ATTR_PATIENT_SEX);
56.         registerAttribute(ATTR_DIALOG_WORSE);
57.         registerAttribute(ATTR_DIALOG_READY);
58.         registerAttribute(ATTR_DIALOG_RETRIG);
59.         registerAttribute(ATTR_DIALOG_RECALL_1);
60.         registerAttribute(ATTR_DIALOG_RECALL_2);
61.         registerAttribute(ATTR_DIALOG_OK_END);
62.         registerAttribute(ATTR_DIALOG_ACK_ER);
63.         registerAttribute(ATTR_DIALOG_PF_1);

64.         // register the Prompts that we are using. So that
65.         // they can be verified before the conversation begins.
66.         registerPrompt(PROMPT_ID_GOTO_ER);

```

```

67. registerPrompt(PROMPT_ID_OK_END);
68. registerPrompt(PROMPT_ID_PEAK_FLOW);
69. registerPrompt(PROMPT_ID_READY_PF1);
70. registerPrompt(PROMPT_ID_RECALL_30);
71. registerPrompt(PROMPT_ID_WORSE);

72. registerPrompt(PROMPT_ID_ALERT_WORSE);
73. registerPrompt(PROMPT_ID_ALERT_NO_RESPONSE);
74. registerPrompt(PROMPT_ID_ALERT_PF1_BELOW_OFFICE_PF);
75. registerPrompt(PROMPT_ID_ALERT_PF1_BELOW_50_PERCENT_PREDICTED);
76. registerPrompt(PROMPT_ID_ALERT_STAT_CHECK);
77.
78. // register the roles that we require
79. registerRole(ROLE_PATIENT);
80. registerRole(ROLE_DOCTOR);
81. }

82. final protected void term()
83.     throws Exception
84.     {
85.     }

86. final protected void execute()
87.     {
88.         Phrase hello = new Phrase();
89.         hello.addMessage("Hello! Are you, ");

```

```

90. String patientName = getPatientName();
91. hello.addName(patientName);
92. hello.addMessage("? ");
93. int areYouTheOne = askYesNo(hello);
94. if(areYouTheOne != ASK_RESPONSE_YES)
95. {
96.     setStatus(DIALOG_STATUS_NORESPONSE);
97.     return;
98. }

99. Phrase messageFrom = new Phrase();
100. messageFrom.addMessage("There is a message from your doctor, ");
101. String doctorName = getDoctorName();
102. messageFrom.addName(doctorName);
103. messageFrom.addMessage(", recorded at");
104. messageFrom.addTime();
105. if(!getAcknowledgement(messageFrom))
106. {
107.     setStatus(DIALOG_STATUS_FAIL);
108.     return;
109. }

110. if(retrig <= 0)
111. {
112.     // [DIQ1] first question
113.     int worse = askYesNo(PROMPT_ID_WORSE);
114.

```

```

115. saveAnswer(ATTR_DIALOG_WORSE,worse);
116.
117. if(worse == ASK_RESPONSE_YES)
118.     alertDoctor(PROMPT_ID_ALERT_WORSE);
119. else if(worse == ASK_RESPONSE_NONE)
120.     {
121.         alertDoctor(PROMPT_ID_ALERT_NO_RESPONSE);
122.         return;
123.     }
124.
125. // [D1Q2] second question
126. int ready = askYesNo(PROMPT_ID_READY_PFI);
127. saveAnswer(ATTR_DIALOG_READY,ready);
128. if(ready != ASK_RESPONSE_YES)
129.     {
130.         retrig++;
131.         switch(retrig)
132.         {
133.             case 1:
134.                 {
135.                     saveAnswer(ATTR_DIALOG_RETRIG,retrig);
136.
137.                     saveAnswer(ATTR_DIALOG_RECALL_1,getAcknowledgement(PROMPT_ID_RECALL_30));
138.                     callAgainMinutes(30);
139.                     break;

```

```

138.     }
139.     case 2:
140.     {
141.         saveAnswer(ATTR_DIALOG_RETRIG,retrig);
142.
143.         saveAnswer(ATTR_DIALOG_RECALL_2,getAcknowledgement(PROMPT_ID_RECALL_30));
144.         callAgain(30,TIME_UNITS_MINUTES);
145.         break;
146.     }
147.     case 3:
148.     {
149.         alertDoctor(PROMPT_ID_ALERT_NO_PF1);
150.         setStatus(DIALOG_STATUS_UNKNOWN);
151.         break;
152.     }
153.     return;
154. }
155. // [D1Q5] third question
156. int pf = askInt(PROMPT_ID_PEAK_FLOW);
157. saveAnswer(ATTR_DIALOG_PF_1,pf);
158. if(peakflow_rule1(pf) && doctor_uses_pfr1)
159. {
160.     alertDoctor(PROMPT_ID_ALERT_PF1_BELOW_OFFICE_PF);
161. }

```

```

162. else if(peakflow_rule2(pf) && doctor_uses_pfr2)
163. {
164.     alertDoctor(PROMPT_ID_ALERT_PFI_BELOW_50_PERCENT_PREDICTED);
165. }
166. else
167. {
168.     // [D1Q7] - ready to do dialog 2 on next scheduling time.
169.     saveAnswer(ATTR_DIALOG_OK_END,
170.         getAcknowledgement(PROMPT_ID_OK_END));
171.     return;
172. }
173. // [D1Q6]
174. saveAnswer(ATTR_DIALOG_ACK_ER, getAcknowledgement(PROMPT_ID_GOTO_ER));
175. alertDoctor(PROMPT_ID_ALERT_STAT_CHECK);
176. }
177. private boolean peakflow_rule1(int pf)
178. {
179.     if(pf < inOfficePF)
180.         return true;
181.     return false;
182. }
183. // compare peak flow to a formula to compute pf based on height, age, sex

```

```

184. private boolean peakflow_rule2(int pf)
185. {
186.     double predicted_pf = 0;
187.
188.     if(sex.equalsIgnoreCase("male"))
189.     {
190.         predicted_pf = (((double)height * 0.0254 * 5.48) + 1.58) - (((double)age * 0.041)) *
60.0;
191.     }
192.     else
193.     {
194.         predicted_pf = (((double)height * 0.0254 * 3.72) + 2.24) - (((double)age * 0.03)) * 60.0;
195.     }
196.
197.     double percent = ((double)pf * 100.0) / predicted_pf;
198.     if(percent < 50.0)
199.         return true;
200.     return false;
201. }

```

EXHIBIT 2

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# **EXHIBIT 2: PSEUDO CODE LISTING FOR CHEMISTRY BATTERY TEST RESULT DIALOG**

```

1 package com.solvetech.st_notify;
2 import java.util.*, com.solvetech.st_lang.*;
3
4 public class ChemicalBatteryTest_Dialog extends DialogBase
5 {
6     private static final int COMPARE_TEST_NORMAL           = 0;
7     private static final int COMPARE_TEST_LOW              = -1;
8     private static final int COMPARE_TEST_HIGH             = 1;
9     private static final int COMPARE_TEST_INDETERMINATE    = -2;
10
11     // attributes
12     private static final String ATTR_PATIENT_AGE           = "person(patient).age";
13     private static final String ATTR_PATIENT_SEX           = "person(patient).sex";
14
15     // constants for test results
16     private static final int TEST_FIELD_NAME               = 0;
17     private static final int TEST_FIELD_RESULT             = 1;
18     private static final int TEST_FIELD_NORMAL_LOW         = 2;
19     private static final int TEST_FIELD_NORMAL_HIGH        = 3;
20     private static final int TEST_FIELD_UNITS              = 4;
21     private static final int TEST_FIELD_REFERENCE_NORMAL   = 5;
22     private static final int TEST_FIELD_REFERENCE_LOW      = 6;
23     private static final int TEST_FIELD_REFERENCE_HIGH     = 7;
24     private static final int TEST_FIELD_REFERENCE_INDETERMINATE = 8;
25
26     private static final int TEST_OUT_NAME                 = 0;
27     private static final int TEST_OUT_RESULT               = 1;
28     private static final int TEST_OUT_NORMAL_LOW           = 2;
29     private static final int TEST_OUT_NORMAL_HIGH          = 3;
30

```

```

31 private static final int TEST_OUT_YOUR_RESULT = 4;
32 // computed - not sent
33 private static final int TEST_OUT_UNITS = 5;
34 private static final int TEST_OUT_REFERENCE = 6;
35 private static final int TEST_OUT_MAX = 7;
36
37 private static final int TEST_TERSE_OUT_NAME = 0;
38 private static final int TEST_TERSE_OUT_RESULT = 1;
39 private static final int TEST_TERSE_OUT_UNITS = 2;
40 private static final int TEST_TERSE_OUT_MAX = 3;
41
42 private static final String TEST_COLUMN_YOUR_RESULT = "yourResult";
43 private static final String TEST_COLUMN_REFERENCE = "reference";
44
45
46 // headers
47 // these must stay in sync with the TEST_FIELD_... constants defined above
48 private static String[] TEST_HEADER_NAMES =
49 {
50     "dialog.test.name",
51     "dialog.test.result",
52     "dialog.test.normal_low",
53     "dialog.test.normal_high",
54     "dialog.test.units",
55     "dialog.test.reference_normal",
56     "dialog.test.reference_low",
57     "dialog.test.reference_high",
58     "dialog.test.reference_indeterminate"
59 };
60
61

```

```

62 // indexes into array TEST_ATTR_FIELD_NAMES
63
64 private static final int TEST_INDEX_GLUCOSE
65 private static final int TEST_INDEX_UREA_NITROGEN
66 private static final int TEST_INDEX_CREATININE
67 private static final int TEST_INDEX_CALCIIUM
68 private static final int TEST_INDEX_SODIUM
69 private static final int TEST_INDEX_POTASSIUM
70 private static final int TEST_INDEX_CO2
71 private static final int TEST_INDEX_CHLORIDE
72 private static final int TEST_INDEX_TOTAL_PROTEIN
73 private static final int TEST_INDEX_ALBUMIN
74 private static final int TEST_INDEX_GLOBULIN
75 private static final int TEST_INDEX_A_G_RATIO
76 private static final int TEST_INDEX_TOTAL_BILIRUBIN
77 private static final int TEST_INDEX_ALKALINE_PHOSPHATASE
78 private static final int TEST_INDEX_AST_SGOT
79 private static final int TEST_INDEX_AST_SGPT
80
81 = 0;
82 = 1;
83 = 2;
84 = 3;
85 = 4;
86 = 5;
87 = 6;
88 = 7;
89 = 8;
90 = 9;
91 = 10;
92 = 11;
93 = 12;
94 = 13;
95 = 14;
96 = 15;

```

```

// Table of attribute names - this will be used to fetch
// the values of the attributes so that the results can be reported.
private static String[][] TEST_ATTR_FIELD_NAMES =
{

```

```

{
    "dialog.test.name.glucose",
    "dialog.test.result.glucose",
    "dialog.test.normal_low.glucose",
    "dialog.test.normal_high.glucose",
    "dialog.test.units.glucose",
    "dialog.test.reference_normal.glucose",
    "dialog.test.reference_low.glucose",

```

```

93 "dialog.test.reference_high.glucose",
94 "dialog.test.reference_indeterminate.glucose"
95 },
96
97 {
98 "dialog.test.name.urea_nitrogen",
99 "dialog.test.result.urea_nitrogen",
100 "dialog.test.normal_low.urea_nitrogen",
101 "dialog.test.normal_high.urea_nitrogen",
102 "dialog.test.units.urea_nitrogen",
103 "dialog.test.reference_normal.nitrogen",
104 "dialog.test.reference_low.nitrogen",
105 "dialog.test.reference_high.nitrogen",
106 "dialog.test.reference_indeterminate.nitrogen"
107 },
108
109 {
110 "dialog.test.name.creatinine",
111 "dialog.test.result.creatinine",
112 "dialog.test.normal_low.creatinine",
113 "dialog.test.normal_high.creatinine",
114 "dialog.test.units.creatinine",
115 "dialog.test.reference_normal.creatinine",
116 "dialog.test.reference_low.creatinine",
117 "dialog.test.reference_high.creatinine",
118 "dialog.test.reference_indeterminate.creatinine"
119 },
120
121 {
122 "dialog.test.name.calcium",
123 "dialog.test.result.calcium",
124 "dialog.test.normal_low.calcium",
125 "dialog.test.normal_high.calcium",
126 "dialog.test.units.calcium",

```

```

124 "dialog.test.reference_normal.calcium",
125 "dialog.test.reference_low.calcium",
126 "dialog.test.reference_high.calcium",
127 "dialog.test.reference_indeterminate.calcium"
128 },
129
130 {
131 "dialog.test.name.sodium",
132 "dialog.test.result.sodium",
133 "dialog.test.normal_low.sodium",
134 "dialog.test.normal_high.sodium",
135 "dialog.test.units.sodium",
136 "dialog.test.reference_normal.sodium",
137 "dialog.test.reference_low.sodium",
138 "dialog.test.reference_high.sodium",
139 "dialog.test.reference_indeterminate.sodium"
140 },
141
142 {
143 "dialog.test.name.potassium",
144 "dialog.test.result.potassium",
145 "dialog.test.normal_low.potassium",
146 "dialog.test.normal_high.potassium",
147 "dialog.test.units.potassium",
148 "dialog.test.reference_normal.potassium",
149 "dialog.test.reference_low.potassium",
150 "dialog.test.reference_high.potassium",
151 "dialog.test.reference_indeterminate.potassium"
152 },
153 {
154 "dialog.test.name.co2",
155 "dialog.test.result.co2",

```

```

155 "dialog.test.normal_low.co2",
156 "dialog.test.normal_high.co2",
157 "dialog.test.units.co2",
158 "dialog.test.reference_normal.co2",
159 "dialog.test.reference_low.co2",
160 "dialog.test.reference_high.co2",
161 "dialog.test.reference_indeterminate.co2"
162 },
163
164 {
165 "dialog.test.name.chloride",
166 "dialog.test.result.chloride",
167 "dialog.test.normal_low.chloride",
168 "dialog.test.normal_high.chloride",
169 "dialog.test.units.chloride",
170 "dialog.test.reference_normal.chloride",
171 "dialog.test.reference_low.chloride",
172 "dialog.test.reference_high.chloride",
173 "dialog.test.reference_indeterminate.chloride"
174 },
175
176 {
177 "dialog.test.name.total_protein",
178 "dialog.test.result.total_protein",
179 "dialog.test.normal_low.total_protein",
180 "dialog.test.normal_high.total_protein",
181 "dialog.test.units.total_protein",
182 "dialog.test.reference_normal.total_protein",
183 "dialog.test.reference_low.total_protein",
184 "dialog.test.reference_high.total_protein",
185 "dialog.test.reference_indeterminate.total_protein"

```

```

186     },
187
188     {
189         "dialog.test.name.albumin",
190         "dialog.test.result.albumin",
191         "dialog.test.normal_low.albumin",
192         "dialog.test.normal_high.albumin",
193         "dialog.test.units.albumin",
194         "dialog.test.reference_normal.albumin",
195         "dialog.test.reference_low.albumin",
196         "dialog.test.reference_high.albumin",
197         "dialog.test.reference_indeterminate.albumin"
198     },
199
200     {
201         "dialog.test.name.globulin",
202         "dialog.test.result.globulin",
203         "dialog.test.normal_low.globulin",
204         "dialog.test.normal_high.globulin",
205         "dialog.test.units.globulin",
206         "dialog.test.reference_normal.globulin",
207         "dialog.test.reference_low.globulin",
208         "dialog.test.reference_high.globulin",
209         "dialog.test.reference_indeterminate.globulin"
210     },
211
212     {
213         "dialog.test.name.a_g_ratio",
214         "dialog.test.result.a_g_ratio",
215         "dialog.test.normal_low.a_g_ratio",
216         "dialog.test.normal_high.a_g_ratio",
217         "dialog.test.units.a_g_ratio",

```

```

217 "dialog.test.reference_normal.a_g_ratio",
218 "dialog.test.reference_low.a_g_ratio",
219 "dialog.test.reference_high.a_g_ratio",
220 "dialog.test.reference_indeterminate.a_g_ratio"
221 },
222
223 {
224 "dialog.test.name.total_bilirubin",
225 "dialog.test.result.total_bilirubin",
226 "dialog.test.normal_low.total_bilirubin",
227 "dialog.test.normal_high.total_bilirubin",
228 "dialog.test.units.total_bilirubin",
229 "dialog.test.reference_normal.total_bilirubin",
230 "dialog.test.reference_low.total_bilirubin",
231 "dialog.test.reference_high.total_bilirubin",
232 "dialog.test.reference_indeterminate.total_bilirubin"
233 },
234
235 {
236 "dialog.test.name.alkaline_phosphatase",
237 "dialog.test.result.alkaline_phosphatase",
238 "dialog.test.normal_low.alkaline_phosphatase",
239 "dialog.test.normal_high.alkaline_phosphatase",
240 "dialog.test.units.alkaline_phosphatase",
241 "dialog.test.reference_normal.alkaline_phosphatase",
242 "dialog.test.reference_low.alkaline_phosphatase",
243 "dialog.test.reference_high.alkaline_phosphatase",
244 "dialog.test.reference_indeterminate.alkaline_phosphatase"
245 },
246
247 {
248 "dialog.test.name.ast_sgot",

```



```

248 "dialog.test.result.ast_sgot",
249 "dialog.test.normal_low.ast_sgot",
250 "dialog.test.normal_high.ast_sgot",
251 "dialog.test.units.ast_sgot",
252 "dialog.test.reference_normal.ast_sgot",
253 "dialog.test.reference_low.ast_sgot",
254 "dialog.test.reference_high.ast_sgot",
255 "dialog.test.reference_indeterminate.ast_sgot"
256 },
257
258
259 {
260 "dialog.test.name.alt_sgpt",
261 "dialog.test.result.alt_sgpt",
262 "dialog.test.normal_low.alt_sgpt",
263 "dialog.test.normal_high.alt_sgpt",
264 "dialog.test.units.alt_sgpt",
265 "dialog.test.reference_normal.alt_sgpt",
266 "dialog.test.reference_low.alt_sgpt",
267 "dialog.test.reference_high.alt_sgpt",
268 "dialog.test.reference_indeterminate.alt_sgpt"
269
270 };
271

```

private static final String TEST\_EXPLANATION =

```

"The Chemical Screening Battery consists of a group of tests of "+
"liver, kidney, and pancreas functioning as well as other blood tests" +
"that are important for health such as calcium, total protein, "+
"and albumin." + "\n" +
" The fasting blood glucose can indicate how well the pancreas is "+
"producing insulin; high levels are associated with diabetes...";

```

```

279 //
280
281 // The following two tables contain explanations for abnormal results for
282 // each test. The first table applies to high test results; the second
283 // to lower than normal results.
284 // It must be kept in the same order as the TEST_INDEX constants
285 // defined above.
286
287 private static final String[] ABNORMAL_HIGH_TEST_EXPLANATION =
288 {
289     // TEST_INDEX_HIGH_GLUCOSE
290     "Elevated blood glucose can be the result of Diabetes Mellitus. If this has not been noted before, you should
291     discuss this result with your medical provider",
292
293     // TEST_INDEX_HIGH_UREA_NITROGEN
294     "High urea nitrogen can be associated with dehydration, kidney problems, or the use of certain medicines",
295
296
297     // TEST_INDEX_HIGH_CREATININE
298     "High creatinine can be associated with dehydration, kidney problems, or the use of certain medicines ",
299
300     // TEST_INDEX_HIGH_CALCIIUM
301     "Elevated calcium can be associated with parathyroid gland disorders, certain medications and use of excess
302     vitamin D, kidney problems, and other disorders",
303     // TEST_INDEX_HIGH_SODIUM
304     "High sodium levels can result from dehydration, diarrhea, excess salt intake, and other disorders",
305
306     // TEST_INDEX_HIGH_POTASSIUM
307     "High potassium levels can come from excess potassium ingestion, renal problems, certain medications, and other
308     disorders",
309

```

310 // TEST\_INDEX\_HIGH\_CO2  
 311 "Elevated carbon dioxide levels can come from repeated vomiting, emphysema, and certain medications",  
 312  
 313  
 314  
 315 // TEST\_INDEX\_HIGH\_CHLORIDE  
 316 "Elevated chloride levels may occur with dehydration, parathyroid disease, adrenal disease, and certain metabolic  
 317 disorders",  
 318  
 319 // TEST\_INDEX\_HIGH\_TOTAL\_PROTEIN  
 320 "High protein levels can result from dehydration, liver disease, chronic infections, and chronic inflammatory  
 321 conditions",  
 322  
 323 // TEST\_INDEX\_HIGH\_ALBUMIN  
 324 "Albumin values can be elevated in dehydration states",  
 325  
 326 // TEST\_INDEX\_HIGH\_GLOBULIN  
 327 "High globulin levels can occur in chronic infections, liver disease, or auto-immune diseases",  
 328  
 329 // TEST\_INDEX\_A\_G\_HIGH\_RATIO  
 330 "Please see comments regarding albumin and globulin",  
 331  
 332 // TEST\_INDEX\_HIGH\_TOTAL\_BILIRUBIN  
 333 "Elevated bilirubin levels can result from liver disease or breakdown of red blood cells",  
 334  
 335  
 336 // TEST\_INDEX\_HIGH\_ALKALINE\_PHOSPHATASE  
 337 "Elevated levels of alkaline phosphatase occur with liver problems, gall bladder disease, and infectious  
 338 mononucleosis",  
 339  
 340 // TEST\_INDEX\_HIGH\_AST\_SGOT

```

341 "Elevated AST levels occur in liver disease and infectious
342 mononucleosis",
343 // TEST_INDEX_HIGH_ALT_SGPT
344 "Increased ALT levels can occur in liver or pancreatic disease, heart or muscle disease, and infectious
345 mononucleosis "
346 );
347
348
349 // These entries must be kept in the same order as the
350 // TEST_INDEX constants defined above.
351
352 private static final String[] ABNORMAL_LOW_TEST_EXPLANATION =
353 {
354 // TEST_INDEX_LOW_GLUCOSE
355 "Low blood glucose can be caused by rare pancreatic or metabolic disorders or certain medications",
356
357
358 // TEST_INDEX_LOW_UREA_NITROGEN
359 "Low urea nitrogen can be associated with poor protein intake or excess fluid intake ",
360
361
362 // TEST_INDEX_LOW_CREATININE
363 "Low creatinine can be associated with decrease muscle mass",
364
365 // TEST_INDEX_LOW_CALCITUM
366 "Low calcium levels can be associated with parathyroid gland disorders, vitamin D deficiency, kidney problems,
367 and other disorders",
368
369 // TEST_INDEX_LOW_SODIUM
370 "Low sodium levels can result from over hydration, diarrhea, diuretic and other medications, and other disorders",
371

```

372 // TEST\_INDEX\_LOW\_POTASSIUM  
373 "Low potassium levels can result from adrenal disorders, certain medications such as diuretics, diabetes, and other  
374 disorders",  
375  
376 // TEST\_INDEX\_LOW\_CO2  
377 "Low carbon dioxide levels can result from diarrhea, kidney problems, diabetes, and certain medications",  
378  
379 // TEST\_INDEX\_LOW\_CHLORIDE  
380 "Low chloride levels can result from vomiting, diabetes, decreased adrenal function, and certain medications",  
381  
382  
383 // TEST\_INDEX\_LOW\_TOTAL\_PROTEIN  
384 "Low protein levels can result from liver disease, malabsorption, and poor nutrition",  
385  
386 // TEST\_INDEX\_LOW\_ALBUMIN  
387 "Low albumin levels can result from liver disease, malabsorption conditions, and poor nutrition",  
388  
389 // TEST\_INDEX\_LOW\_GLOBULIN  
390 "Low globulin levels can occur with renal disease and certain congenital or acquired immune disorders, ",  
391  
392 // TEST\_INDEX\_A\_G\_LOW\_RATIO  
393 "Low A/G ratios can result from liver disease, collagen disease, chronic infections, and poor nutrition",  
394  
395 // TEST\_INDEX\_LOW\_TOTAL\_BILIRUBIN  
396 "This is a liver test; low levels of bilirubin are not worrisome",  
397  
398  
399 // TEST\_INDEX\_LOW\_ALKALINE\_PHOSPHATASE  
400 "Low levels of alkaline phosphatase can occur with poor nutrition, hypothyroidism, severe anemia, and  
401 hypophosphatasia",  
402

```

403 // TEST_INDEX_LOW_AST_SGOT
404 "This is a liver function test; low levels of AST are not worrisome",
405
406 // TEST_INDEX_LOW_ALT_SGPT
407 "This is a liver function test; low levels of ALT are not worrisome"
408 };
409
410 //=====
411 // the header names will contain the names of each column
412 // in the table of test results.
413 private String[] headerNames;
414
415 // the testRows contain the data values corresponding to the
416 // array of attribute constants, TEST_ATTR_FIELD_NAMES, defined above
417 // each row represents a different test.
418 // for instance testRows[3] would represent the values for the calcium
419 // test. The index, TEST_INDEX_CALCIIUM, would be used to address
420 // this row, ie. testRows[TEST_INDEX_CALCIIUM]. The values of a row
421 // would correspond (in order) to the test name, result, normal_low, normal_high,
422 // units and a reference. For instance testRows[TEST_INDEX_GLUCOSE][TEST_FIELD_RESULT]
423 // would contain the patients test result value for the glucose test.
424
425 private String[][] testRows;
426
427 // the results and normals are separated out so that they can be
428 // used in calculations. They are loaded up from the attribute information.
429 private double[] testResult;
430 private double[] testNormalLow;
431 private double[] testNormalHigh;
432
433 private String sex = "";

```

```

434 private int age = 0;
435
436 public ChemicalBatteryTest_Dialog()
437 {
438     super();
439 }
440
441 final protected void init()
442     throws Exception
443 {
444     headerNames = new String[TEST_HEADER_NAMES.length];
445     testRows = new String[TEST_ATTR_FIELD_NAMES.length][];
446
447     // load up all the variables passed in from the message.
448     // load the headers
449
450     for(int i=0;i<TEST_HEADER_NAMES.length;i++)
451     {
452         headerNames[i] = getAttrString(TEST_HEADER_NAMES[i]);
453     }
454
455     for(int i=0;i<TEST_ATTR_FIELD_NAMES.length;i++)
456     {
457         String[] row = TEST_ATTR_FIELD_NAMES[i];
458         testRows[i] = new String[row.length];
459
460         for(int j=0;j<testRows[i].length;j++)
461         {
462             testRows[i][j] = getAttrString(TEST_ATTR_FIELD_NAMES[i][j]);
463         }
464         testResult[i] = getAttrDouble(TEST_ATTR_FIELD_NAMES[i][TEST_FIELD_RESULT]);

```

```

465         testNormalLow[i] =
466         getAttrDouble(TEST_ATTR_FIELD_NAMES[i][TEST_FIELD_NORMAL_LOW]);
467         testNormalHigh[i] =
468         getAttrDouble(TEST_ATTR_FIELD_NAMES[i][TEST_FIELD_NORMAL_HIGH]);
469     }
470
471     age = getAttrInt(ATTR_PATIENT_AGE);
472     sex = getAttrString(ATTR_PATIENT_SEX);
473
474
475     final protected void register()
476     {
477         // registration is a way of telling scheduler what attributes are
478         // needed for a message.
479
480         // only the headers are registered
481         // It is quite possible that the patient only has
482         // had a subset of the tests. Registering
483         // all tests would result in the dialog aborting
484         // if any tests were missing.
485         for(int i=0;i<TEST_HEADER_NAMES.length;i++)
486         {
487             registerAttribute(TEST_HEADER_NAMES[i]);
488         }
489
490         // to compute the normal for the AKALINE_PHOSPHATASE test
491         // we need the age and sex of the patient.
492         registerAttribute(ATTR_PATIENT_AGE);
493         registerAttribute(ATTR_PATIENT_SEX);
494
495         // register the prompts that we are using. So that

```



```

496 // they can be verified before the conversation begins.
497 //
498 //
499 //
500 // register the roles that we require
501 registerRole(ROLE_PATIENT);
502 registerRole(ROLE_DOCTOR);
503 }
504
505 final protected void term()
506     throws Exception
507 {
508 }
509
510 final protected void execute()
511 {
512     // login has already been done.
513
514     Phrase messageFrom = new Phrase();
515     messageFrom.addMessage("Here are the results of your lab tests.");
516     if(!getAcknowledgement(messageFrom))
517     {
518         setStatus(DIALOG_STATUS_FAIL);
519         return;
520     }
521
522     Phrase abnormalHighTestExplanation = new Phrase();
523     Phrase abnormalLowTestExplanation = new Phrase();
524     boolean haveAbnormalTests = false;
525     boolean haveAbnormalLowTests = false;
526     boolean haveAbnormalHighTests = false;

```

```

527         for(int i=0;i<testRows.length;i++)
528         {
529             int compare = compareToNormal(i,testResult[i],testNormalLow[i],testNormalHigh[i]);
530
531
532             if(compare == COMPARE_TEST_LOW)
533             {
534                 haveAbnormalLowTests = true;
535
536                 abnormalLowTestExplanation.
537                 addMessage(ABNORMAL_LOW_TEST_EXPLANATION[i]);
538             }
539             else if(compare == COMPARE_TEST_HIGH)
540             {
541                 haveAbnormalHighTests = true;
542
543                 abnormalHighTestExplanation.
544                 addMessage(ABNORMAL_HIGH_TEST_EXPLANATION[i]);
545             }
546
547             if(haveAbnormalHighTests || haveAbnormalLowTests)
548                 haveAbnormalTests = true;
549
550             DialogTable dt = new DialogTable();
551             if(isVerbose())
552             {
553                 Phrase[] header = new Phrase[TEST_OUT_MAX];
554                 header[TEST_OUT_NAME] = new Phrase(headerNames[TEST_FIELD_NAME]);
555                 header[TEST_OUT_RESULT] = new Phrase(headerNames[TEST_FIELD_RESULT]);
556                 header[TEST_OUT_NORMAL_LOW] = new Phrase(headerNames[TEST_FIELD_NORMAL_LOW]);
557

```

```

558 header[TEST_OUT_NORMAL_HIGH] = new Phrase(headerNames[TEST_FIELD_NORMAL_HIGH]);
559 header[TEST_OUT_YOUR_RESULT] = new Phrase(TEST_COLUMN_YOUR_RESULT);
560 header[TEST_OUT_UNITS] = new Phrase(headerNames[TEST_FIELD_UNITS]);
561 header[TEST_OUT_REFERENCE] = new Phrase(TEST_COLUMN_REFERENCE);
562
563 dt.addHeader(header);
564 for(int i=0;i<testRows.length;i++)
565 {
566     Phrase[] row = new Phrase[TEST_OUT_MAX+1];
567
568     row[TEST_OUT_NAME] = new Phrase(testRows[i][TEST_FIELD_NAME]);
569
570
571     row[TEST_OUT_RESULT] = new Phrase(testResult[i]);
572
573     row[TEST_OUT_NORMAL_LOW] = new Phrase(testNormalLow[i]);
574
575     row[TEST_OUT_NORMAL_HIGH] = new Phrase(testNormalHigh[i]);
576
577     boolean isNormal = isTestNormal(i,testResult[i],testNormalLow[i],testNormalHigh[i]);
578
579     row[TEST_OUT_YOUR_RESULT] = new Phrase(isNormal);
580
581     row[TEST_OUT_UNITS] = new Phrase(testRows[i][TEST_FIELD_UNITS]);
582     Phrase ref = choseReferencePhrase(i,testResult[i],testNormalLow[i],testNormalHigh[i]);
583
584     row[TEST_OUT_REFERENCE] = ref;
585
586     dt.addRow(row);
587 }
588 getAcknowledgement(dt);

```

```

589     }
590     else
591     {
592         if(haveAbnormalTests)
593             getAcknowledgement(new Phrase("All your tests were normal with the exception of the following
594             tests. "));
595         else
596             getAcknowledgement(new Phrase("All your tests were normal. There were no abnormal results. "));
597
598         if(haveAbnormalTests)
599         {
600             // terse mode - no headers
601             for(int i=0; i<testRows.length; i++)
602             {
603                 boolean isNormal = isTestNormal(i, testResult[i], testNormalLow[i], testNormalHigh[i]);
604
605                 if(! isNormal)
606                 {
607                     Phrase[] row = new Phrase[TEST_TERSE_OUT_MAX+1];
608
609                     row[TEST_OUT_NAME] = new Phrase(testRows[i][TEST_FIELD_NAME]);
610
611                     row[TEST_OUT_RESULT] = new Phrase(testResult[i]);
612
613                     row[TEST_OUT_UNITS] = new Phrase(testRows[i][TEST_FIELD_UNITS]);
614
615                     dt.addRow(row);
616                 }
617             }
618         }
619     }

```

```

620         getAcknowledgement(dt);
621     }
622     getAcknowledgement(new Phrase(TEST_EXPLANATION));
623     if(haveAbnormalLowTests)
624         getAcknowledgement(abnormalLowTestExplanation);
625     if(haveAbnormalHighTests)
626         getAcknowledgement(abnormalHighTestExplanation);
627 }
628
629
630 private Phrase choseReferencePhrase(int testIndex, double testResult, double normalLow, double normalHigh)
631 {
632     String ref = "";
633
634     int compare = compareToNormal(testIndex, testResult, normalLow, normalHigh);
635
636     if(compare == COMPARE_TEST_NORMAL)
637         ref =
638         testRows[testIndex][TEST_FIELD_REFERENCE_NORMAL];
639     else if(compare == COMPARE_TEST_LOW)
640         ref = testRows[testIndex][TEST_FIELD_REFERENCE_LOW];
641     else if(compare == COMPARE_TEST_HIGH)
642         ref = testRows[testIndex][TEST_FIELD_REFERENCE_HIGH];
643     else if(compare == COMPARE_TEST_INDETERMINATE)
644         ref = testRows[testIndex][TEST_FIELD_REFERENCE_INDETERMINATE];
645
646     return new Phrase(ref);
647 }
648
649 private boolean isTestNormal(int testIndex, double testResult, double normalLow, double normalHigh)
650 {

```

```

651 int compare = compareToNormal(testIndex, testResult, normalLow, normalHigh);
652 if(compare == COMPARE_TEST_NORMAL)
653     return true;
654 return false;
655 }
656
657
658 private int compareToNormal(int testIndex, double testResult, double testNormalLow, double testNormalHigh)
659 {
660     int compare = 0;
661     if((testIndex == TEST_INDEX_ALKALINE_PHOSPHATASE)
662     {
663         compare = compareForAlkalinePhosphatase(age, sex, testResult);
664     }
665     else
666     {
667         if(testResult < testNormalLow)
668             compare = COMPARE_TEST_LOW;
669         if(testResult > testNormalHigh)
670             compare = COMPARE_TEST_HIGH;
671     }
672     //
673     return compare;
674 }
675
676
677
678 private static int REFTABLE_COL_AGE_LOW = 0;
679 private static int REFTABLE_COL_AGE_HIGH = 1;
680 private static int REFTABLE_COL_VALUE_LOW = 2;
681 private static int REFTABLE_COL_VALUE_HIGH = 3;

```

```

682 private int[][] alkalinePhosphataseRefValByAgeMale =
683 {
684     // low age, high age, lowNormal, highNormal
685     { 1, 9, 145, 420 },
686     { 10, 11, 130, 560 },
687     { 12, 13, 200, 495 },
688     { 14, 15, 130, 525 },
689     { 16, 19, 65, 260 }
690 };
691
692 private int[][] alkalinePhosphataseRefValByAgeFemale =
693 {
694     // low age, high age, lowNormal, highNormal
695     { 1, 9, 145, 420 },
696     { 10, 11, 130, 560 },
697     { 12, 13, 105, 420 },
698     { 14, 15, 70, 230 },
699     { 16, 19, 50, 130 }
700 };
701
702 // return 0 if normal, +1 for high, -1 for low and -2 for indeterminate
703 private int compareForAlkalinePhosphatase(int age,String sex,double testValue)
704 {
705     int[][] refTable = null;
706     if(sex.equalsIgnoreCase("male"))
707     {
708         refTable = alkalinePhosphataseRefValByAgeMale;
709     }
710     else
711     {
712         refTable = alkalinePhosphataseRefValByAgeFemale;

```

```

713     }
714
715     for(int i=0;i<refTable.length;i++)
716     {
717         if(age >= refTable[i][REFTABLE_COL_AGE_LOW] && age <=
718             refTable[i][REFTABLE_COL_AGE_HIGH])
719         {
720             if(testValue <
721                 refTable[i][REFTABLE_COL_VALUE_LOW])
722                 return COMPARE_TEST_LOW;
723             if(testValue >
724                 refTable[i][REFTABLE_COL_VALUE_HIGH])
725                 return COMPARE_TEST_HIGH;
726             return COMPARE_TEST_NORMAL;
727         }
728     }
729
730     return COMPARE_TEST_INDETERMINATE;
731 }
732 }
733
// must be normal
// not in the age range - indeterminate

```



EXHIBIT 3

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### EXHIBIT 3

#### PSEUDO CODE LISTING OF TEST RESULT DELIVERY FOR STREPOCOCCUS TEST

```
1 package com.solvech.st_notify;
2
3 import java.util.*;
4
5 import com.solvech.st_lang.*;
6
7 public class StrepTest_Dialog extends DialogBase
8 {
9
10     private final static String ATTR_DIALOG_YOUR_STREP_RESULTS = "dialog.strep_results";
11     private final static String ATTR_DIALOG_STREP_REFERENCE = "dialog.strep_reference";
12     private final static String TEST_RESULT_MESSAGE_INTRO = "Your recent throat culture for Streptococcus was";
13
14     private static final String ABNORMAL_TEST_EXPLANATION =
15         "This germ can cause sore throat and fever and enlargement of neck glands. Even if you do not have these symptoms
16         you should receive an antibiotic to eradicate the germ so you do not have other complications.";
17
18     private static final String NORMAL_TEST_EXPLANATION =
19         "This test showed no evidence of Streptococcus. Other germs besides Strep can cause sore throat, fever and signs of
20         illness."
21
22     private static final String INDETERMINATE_TEST_EXPLANATION =
23         "The test for Strep could not be processed because of laboratory technical difficulties or may take somewhat longer to
24         process. If we are able to process it in spite of these difficulties, we will forward you the result in 24 hours.";
25
26     private boolean testResultPositive = false;
```

```

27 private String testResultReference = "";
28
29 //=====
30 public StrepTest_Dialog()
31 {
32
33     super();
34
35     final protected void init()
36     throws Exception
37     {
38         testResultPositive =
39         getAttrBoolean(ATTR_DIALOG_YOUR_STREP_RESULTS);
40         testResultReference = getAttrString(ATTR_DIALOG_STREP_REFERENCE);
41     }
42
43     final protected void register()
44     {
45
46         // registration is a way of telling scheduler what attributes are
47         // needed for a message.
48
49         registerAttribute(ATTR_DIALOG_YOUR_STREP_RESULTS);
50         registerAttribute(ATTR_DIALOG_STREP_REFERENCE);
51
52         // register the prompts that we are using. So that
53         // they can be verified before the conversation begins.
54
55
56         // register the roles that we require
57         registerRole(ROLE_PATIENT);

```

```

58     registerRole(ROLE_DOCTOR);
59 }
60
61 final protected void term()
62     throws Exception
63 {
64 }
65
66 final protected void execute()
67 {
68     // login has already been done.
69
70     Phrase testResultPhrase = new
71     Phrase(TEST_RESULT_MESSAGE_INTRO);
72
73     if(testResultPositive)
74         testResultPhrase.addMessage("POSITIVE");
75
76         getAcknowledgement(new Phrase(ABNORMAL_TEST_EXPLANATION));
77
78     if(testResultPositive = "NEGATIVE")
79         testResultPhrase.addMessage("NEGATIVE");
80         getAcknowledgement(new Phrase(NORMAL_TEST_EXPLANATION);
81
82     if(testResultPositive = "INDETERMINATE")
83         testResultPhrase.addMessage("INDETERMINATE");
84         getAcknowledgement(new Phrase(INDETERMINATE_TEST_EXPLANATION);
85
86         if(!getAcknowledgement(testResultPhrase))
87         {
88             setStatus(DIALOG_STATUS_FAIL);

```

```
89     return;
90 }
91
92 // for verbose mode, give the reference to Streptococcus
93 if(isVerbose())
94     getAcknowledgement(new Phrase(testResultReference));
95 }
96
97 }
```

# **EXHIBIT E**

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## ASSIGNOR:

SOLVETECH CORPORATION

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## ASSIGNEE:

MEDCOMMUNICATIONS CORPORATION  
1050 CROOKED CREEK DRIVE  
LOS ALTOS, CALIFORNIA 94024

SERIAL NUMBER: 09717915

FILING DATE: 11/21/2000

PATENT NUMBER:

ISSUE DATE:

TITLE: MEDICAL INFORMATION SYSTEM HAVING INTERACTIVE MESSAGING INTERFACE



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TITLE: ADAPTIVE COMMUNICATION METHODS AND SYSTEMS FOR FACILITATING THE  
GATHERING, DISTRIBUTION AND DELIVERY OF INFORMATION RELATED TO  
MEDICAL CARE

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FILING DATE: 01/25/2002

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ISSUE DATE: 04/25/2006

TITLE: ADAPTIVE COMMUNICATION METHODS AND SYSTEMS FOR FACILITATING THE  
GATHERING, DISTRIBUTION AND DELIVERY OF INFORMATION RELATED TO  
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SolveTech Corporation	10/26/2006
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Street Address:	1050 Crooked Creek Drive
City:	Los Altos
State/Country:	CALIFORNIA
Postal Code:	94024
PROPERTY NUMBERS Total: 3	
Property Type	Number
Patent Number:	7034691
Application Number:	09717915
Application Number:	11317597
CORRESPONDENCE DATA	
Fax Number:	(408)392-9262
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>	
Phone:	4083929250
Email:	pdisney@macpherson-kwok.com
Correspondent Name:	Gideon Gimlan
Address Line 1:	2033 Gateway Place
Address Line 2:	Suite 400
Address Line 4:	San Jose, CALIFORNIA 95110
ATTORNEY DOCKET NUMBER:	20109-001
NAME OF SUBMITTER:	Gideon Gimlan
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